HKUSPACE
香港大學專業進修學院
HKU School of Professional and Continuing Education

Advanced Diploma in Engineering / Advanced Diploma in Lift Engineering

Semester 1, 2018-19

Assignment

Programme Code	:	IT021
Module Code	:	ENGG4016 / ENGG4039
Course Title	:	**Electrical and Electronic Principles**
Total Marks	:	100 marks
Submission Deadline	:	13 Nov 2018

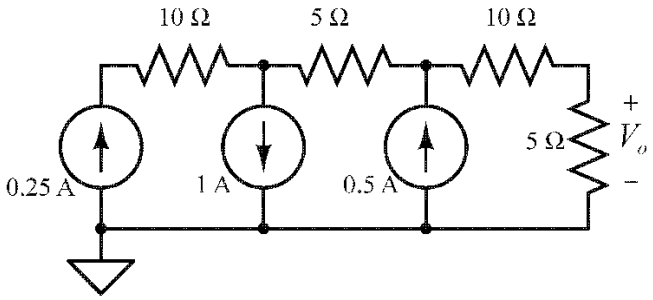
Class : _____

Name : _____

Student ID : _____

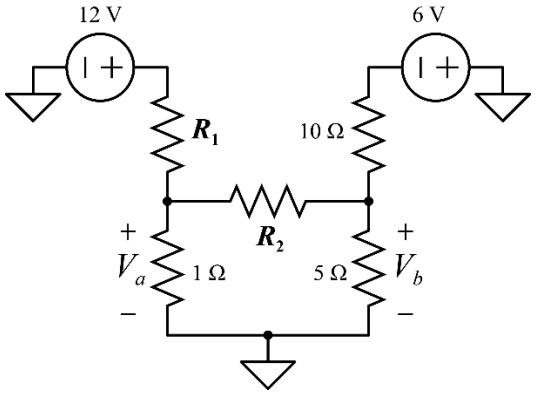
Marks
/100

Question 1 a) Find V_o of the following circuit. (25 marks)



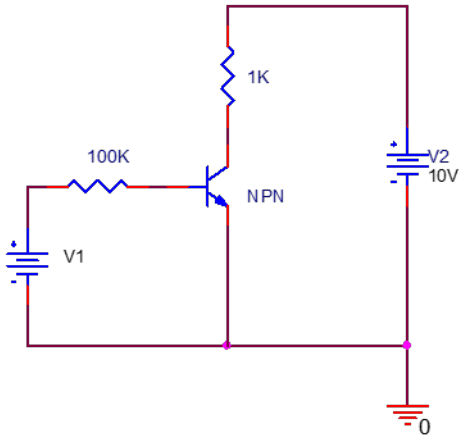
Solution:

b) Given V_a = 3.2 V and V_b = 2 V in the circuit below, find the values of R_1 and R_2.



Solution:

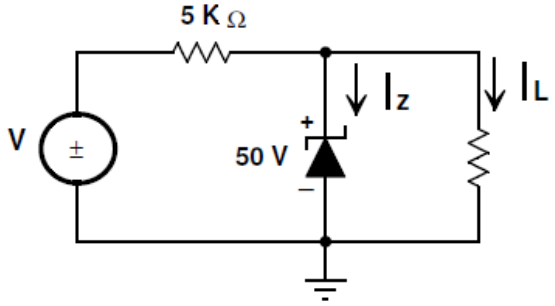
Question 2 The figure below is a BJT transistor amplifier configuration with β=100 and V_{BE} = 0.7V, where R_B is 100KΩ base resistor. (25 marks)



a) What is the collector current and the collector-emitter voltage if transistor is in cutoff state?
b) Find the expression of collector current in respect of V.
c) What is the saturated current in emitter?
d) What happen to the transistor if R_B is being removed with V = 1V?
e) What is the name of this configuration?

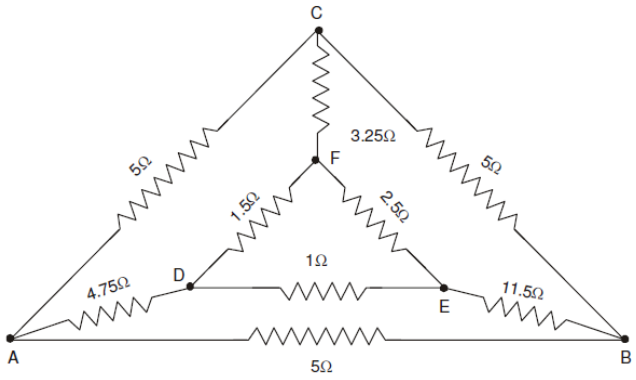
Solution:

Question 3 From the circuit below, determine the range of the voltage source if: $0 \leq I_L \leq 4mA \quad and \quad 2 \leq I_Z \leq 8mA$ (25 marks)



Solution:

Question 4 Find the resistance between point A and point B in the resistor network below, show your steps clearly. (25 marks)



Solution:

~ End of Assignment ~